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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
SCHWARTZ, JORDAN MARC	

ART UNIT	PAPER NUMBER
2873	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/593,613	LARICHEV ET AL.	
	Examiner	Art Unit	
	Jordan M. Schwartz	2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 January 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *30-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *30,34,35 and 39* is/are rejected.

7)☒ Claim(s) *31-33 and 36-38* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

The amended abstract submitted January 15, 2010 is objected to because it needs to commence on a separate page in compliance with MPEP 608.01.

The specification is also objected to for the following reason. On page 13, line 2, "two lenses (7a and 7b)" is presumed to be "two lenses (7a and 7d)". Specifically, "7b" is disclosed as and labeled as the movable prism (see figure 2 and specification page 13, line 3) and 7d is a lens of the refraction compensator (see figure 2). Correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 30, 34-35 and 39 are rejected under 35 U.S.C. 102(e) as being anticipated by Oliver et al publication number 2004/0100619.

Oliver reads on these claims by disclosing the limitations therein including the following: an ophthalmologic instrument to measure the aberrations of the eye (abstract); comprising a point light source which is projected onto the retina of an eye to create a virtual light source on it (figures 1-2 and 4, abstract, paragraphs 0011 and

0022); the radiation being scattered by the retina and passes through the optical system of the eye and becomes phase-modulated which corresponds to the total optical aberrations of the eye (paragraphs 0007, 0011-0012, 0023-0024, and regardless, light reflected by the retina from a point light source will inherently be phase-modulated by the eye corresponding to the total optical aberrations of the eye); a system for measuring the shape of the wavefront of the radiation leaving the eye (figures 1-2 and 4, paragraphs 0011-0012 and 0023-0024, the wavefront sensor); the output signal of which is passes to the control system of the instrument (figs 1-2 and 4, paragraph 0023 i.e. from the wavefront sensor to a computer); a system for compensating for the aberrations located between the eye and the measuring system (figs 1-2 and 4, paragraphs 0011-0012, 0023-0024, the corrector system as the system for compensating for aberrations); the compensation system comprising a refraction compensator that controls focusing of the radiation scattered by the retina (paragraph 0010 disclosing “correcting for high order aberrations i.e. corrections beyond defocus and astigmatism" thereby disclosing that the compensation system corrects for high order aberrations in addition to correcting for defocus i.e. “beyond defocus” and also fig 2, paragraph 0029, disclosing the use of a visual target and eye chart i.e. controlling focusing); the compensating system comprising an astigmatism compensator (paragraph 0010 disclosing “correcting for high order aberrations i.e. corrections beyond defocus and astigmatism" thereby disclosing that the compensation system corrects for high order aberrations in addition to correcting for astigmatism i.e. “beyond astigmatism”). It is believed that the compensation system of Oliver (and therefore the

astigmatism compensator) will inherently be located at the image plane of the pupil of the eye for the purpose of providing the required astigmatism and aberration compensation similar to that of the claimed invention. Oliver further discloses a projector of test patterns that jointly with the compensators projects an image of a test pattern onto the retina (abstract, paragraphs 0011-0012, 0023-0024, claim 7, the testing unit which can include a projector as the "projector of test patterns" and paragraph 0045 disclosing the projector of test patterns which jointly with the compensation unit i.e. the refraction and astigmatism compensators projecting an image of the test pattern onto the retina); an alignment system that allows adjusting the proper distance between the eye and the instrument (paragraph 0010 re alignment and the system will inherently have to have a means to adjust the distance between the eye and the instrument for proper alignment); and the compensation system further including a compensator of high-order aberrations (paragraphs 0010, 0021, 0024).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 30, 34-35 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Levine patent number 6,964,480 in view of Oliver publication number 2004/0100619.

Levine discloses the limitations therein including the following: an ophthalmologic instrument to measure the aberrations of the eye (abstract, column 1, lines 56-67, column 5, line 65 to column 6, line 2); comprising a point light source which is projected onto the retina of an eye to create a virtual light source on it (figure 6A, light source “51”, column 8, lines 16-20, column 12, lines 47-55); the radiation being scattered by the retina and passes through the optical system of the eye and becomes phase-modulated which corresponds to the total optical aberrations of the eye (column 12, lines 56 to column 13, line 27 and regardless, light reflected by the retina from a point light source will inherently be phase-modulated by the eye corresponding to the total optical aberrations of the eye); a system for measuring the shape of the wavefront of the radiation leaving the eye (figure 6A, column 14, line 51 to column 15, line 30, column 16, lines 42-54, wavefront sensor "55"); the output signal of which is passes to the control system of the instrument (figure 6a, column 14, lines 15-19, showing “wavefront sensor 55” connected to “controller 57”); a system for compensating for the aberrations located between the eye and the measuring system (figure 6A, column 15, lines 10-19, column 16, lines 42-54, phase compensator “53” located between the light reflected from the eye “1” and the measuring system “55” and which compensates aberrations of the eye); the compensation system comprising a refraction compensator that controls focusing of the radiation scattered by the retina (abstract, column 7, lines 6-15); the compensating system comprising an astigmatism compensator (column 18, line 59 to column 19 ,line 7). It is believed that the phase compensator of Levine (and therefore the astigmatism compensator) will inherently be located at the image plane of the pupil

of the eye for the purpose of providing the required astigmatism and aberration compensation similar to that of the claimed invention. Levine further discloses an alignment system that allows adjusting the proper distance between the eye and the instrument (column 19, lines 59-64); and the compensation system further including a compensator of high-order aberrations (abstract, column 18, line 59 to column 19, line 6).

Levine discloses as is set forth above including disclosing a projector of test patterns that jointly with the compensators projects an image of a test pattern onto the pupil for the purpose of getting patient feedback as to the accuracy of wavefront aberrations (abstract, column 6, lines 10-18, column 12, lines 1-11, column 15, lines 3-19, figure 6a, the projection of the fixation target "71" which projected target onto the retina can be considered as a "test pattern") but does not specifically disclose the image of the test pattern being projected on the retina. However, Oliver teaches that in an ophthalmologic device that measures wavefront aberrations, that has a system for compensating for said aberrations, that has a projection system to project test patterns onto the eye and which relies upon patient feedback as to the accuracy of the measurements (abstract, figs 1 and 4, paragraphs 0023-0024), that the system can also be used to provide information as to possible retinal diseases and therefore can have the test patterns directed onto the retina of the eye for the purpose of obtaining feedback as to the accuracy of the aberration measurements and also to provide information as to the condition of the retina (paragraph 0026, 0045-0048). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention

was made to have the projection system of Levine as providing the test patterns onto the retina of the eye since Oliver teaches that in an ophthalmologic device that measures wavefront aberrations, that has a system for compensating for said aberrations, that has a projection system to project test patterns onto the eye and which relies upon patient feedback as to the accuracy of the measurements, that the system can also be used to provide information as to possible retinal diseases and therefore can have the test patterns directed onto the retina of the eye for the purpose of obtaining feedback as to the accuracy of the aberration measurements and also to provide information as to the condition of the retina.

Response to Arguments

Applicant's arguments with respect to the above rejected claims have been considered but are moot in view of the new ground(s) of rejection.

Since the above rejections are new grounds of rejections and were not necessitated by amendment, this action has been made non-final.

Allowable Subject Matter

Claims 31-33 and 36-38 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: with respect to the allowable subject matter, none of the prior art either alone or in combination disclose or teach of the claimed combination of limitations to warrant a rejection under 35 USC 102 or 103. Specifically, with reference to claims 31 and 36,

none of the prior art either alone or in combination disclose or teach of the ophthalmic instrument specifically including, as the distinguishing features in combination with the other limitations, the refraction compensator comprising a movable prism and a dichroic mirror which are placed between two lenses, and wherein the dichroic mirror is operable as a beam-splitter to align the instrument. Specifically, with reference to claims 32 and 37, none of the prior art either alone or in combination disclose or teach of the ophthalmic instrument specifically including, as the distinguishing features in combination with the other limitations, the astigmatism compensator comprising two cylindrical lenses of opposite signs or two toric lenses of opposite signs, wherein the lenses are independently rotatable around the optical axis of the compensator, and a system for setting the initial turning angles of the lenses. Specifically, with reference to claims 33 and 38, none of the prior art either alone or in combination disclose or teach of the ophthalmic instrument specifically including, as the distinguishing features in combination with the other limitations, the instrument further comprising a built-in automatic calibration system which uses an additional virtual light source as a test element to measure current positions of the compensators.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jordan M. Schwartz whose telephone number is 571-272-2337. The examiner can normally be reached on Monday to Friday from 8:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Mack can be reached on 571-272-2333. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jordan M. Schwartz
Primary Examiner
Art Unit 2873
March 18, 2010

/Jordan M. Schwartz/
Primary Examiner, Art Unit 2873